Ultima® Underworld™
The Stygian Abyss™
INSTALL GUIDE
IBM-PC 386SX+ & 100% compatibles

SYSTEM REQUIREMENTS

Computer. A 386SX or higher IBM-PC or 100% compatible system.

Video Card. An IBM VGA or compatible video card with at least 256K of video ram. (Note: MCGA, as found on the PS/2 model 25 and model 30, will not work).

Free RAM. You must have at least 640K of low RAM (memory) to play *ULTIMA Underworld*. Of that 640K, at least 522K of low memory must be *available* at the DOS prompt to run the *minimum* game configuration. Other configurations may require as much as 557K free.

EMS. In addition to 522-557K of free RAM, you must have at least 480K (491520 bytes) of *expanded memory* available at the DOS prompt. The game won't run with less than that. Expanded memory above 480K (up to a maximum of 1 megabyte) is used to speed play.

Hard Disk. You must have at least 8 megabytes of hard disk space available. This allows you to install *ULTIMA Underworld* in its smallest configuration. Other configurations require as much as 13 megabytes of hard disk space.

INSTALLATION

1. Insert disk #1 in a 5.25" or 3.5" floppy drive.
2. Type the letter of your floppy drive followed by a colon, then press Enter. For example, if your floppy drive is drive A, type "A: Enter."
3. Type "INSTALL Enter."
4. The Configuration Screen appears. Your current configuration (including required hard disk space) is shown on the left. Options available to you are displayed on the right.
   - Use the arrow keys on your keyboard to highlight the option you want.
   - A highlighted option appears as blue text in a gray box.
   - Press Enter to select a highlighted option.

   While selecting options, you can press Esc at any time to return to DOS. Once the program begins copying files to your hard disk, press Control Break if you need to abort installation. (You may have to try a few times before the program aborts. Also note that you will have to delete any files and/or directories that were copied during the aborted installation before you can try installing again.)
5. The first configuration option is *Sound System Installation*. This determines how music and sound effects are played. Your choices are:

   None
   PC Speaker
   Ad Lib Music Card
   Sound Blaster
   Sound Blaster Pro
   Roland MT-32 or LAPC-1

   Highlight the sound board you have (or "None" or "PC Speaker" if you don't have a sound board) and press Enter.
6. The next option is *Speech Selection*. If you have one of the sound boards listed on the right side of the screen, you can hear digitized speech during the game's introduction. (Note that you can use a different sound board to play music/sound effects and voices.) The options on this screen are:

   None
   Sound Blaster
   Sound Blaster Pro

   Highlight the option you want and press Enter to select it. Note that the speech files take up 1.5 megabytes of disk space. If your hard disk is nearly full, you may not want to install speech — you will still be able to follow the story by reading the game text.
7. In *ULTIMA Underworld*, some events and actions are illustrated in special graphic sequences. If you are low on hard disk space, you may want to display these scenes without animation. This can be done from the *Animating Cut Scenes* option screen. Here, the choices are:

   Animating
   Static

   As you might expect, animating cut scenes feature characters, creatures and objects in motion. Static cut scenes are like still photographs — the same information is conveyed, but nothing moves. The animating cut scenes are more exciting, but they take up 3 megabytes of extra hard disk space. Highlight the option you want and press Enter to select it.
8. *Hard Disk Installation* is the next choice. The installation program detects which drives are available (i.e., which of your hard disks — or

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partitions — have enough free space) and lists them on the right. Type the letter of the drive on which you want to install *ULTIMA Underworld*. Then type a directory name, or press Enter to select the default UW directory.

9. When the *Confirm Selections* screen appears, you must decide whether to copy the files to your hard disk. If the configuration on the left is correct, select "Yes" to continue. If the configuration is incorrect, select "No" and you will begin again, from the Sound System Installation screen (Step 5, above).

10. When you select "Yes," the installation program begins copying the files from the original floppies to your hard disk. Insert each floppy disk into your drive as prompted and press any key to continue the file copy. *Copying all the files can go very quickly or it can take as long as half an hour, depending on the speed of your computer.*

11. When installation is complete, you automatically return to DOS, in the directory to which you installed the game. To play, type "UW."

12. If you have never played *ULTIMA Underworld* before, consult the Player's Guide. This begins with a tutorial that explains everything you need to know to get started. If you encounter any difficulties, consult the "Troubleshooting" section of this Install Guide. If problems persist, call ORIGIN Customer Service.

CHANGING YOUR CONFIGURATION

Follow the reinstallation instructions below if you ever:

- free disk space and wish to change from static to animating cut scenes, or
- add a sound card (or change from one sound card to another).

Return to the drive and directory where you installed the game and type "Install." This allows you to change any or all of the selections you made when you originally installed *ULTIMA Underworld*. Simply select the options that reflect your current hardware configuration. (See the installation instructions, above.)

If you have a sound card in your PC and you originally installed the game without sound or speech, or if you change your cut scene configuration from static to animated (or vice versa), the installation program must copy new files from the original floppies to your hard drive. Insert the original game disks when prompted.

MEMORY USAGE

Requirements

ULTIMA Underworld requires 640K of main RAM and at least 480K expanded memory. Of the 640K, at least 522K must be available at the system prompt. The game will not run with less.

- *Music and sound effects* alone require additional free RAM.
  * PC Speaker (sound effects only) requires approximately 8K over the base 522K (a total of 530K).
  * The Sound Blaster and Sound Blaster Pro require approximately 31K over the base 522K (a total of 553K).
  * The Roland LAPC-1 and Roland MT-32 require approximately 20K over the base 522K (a total of 542K).
- *Digitized speech* alone requires additional free RAM.
  * The Sound Blaster and Sound Blaster Pro require approximately 6K (a total of 528K).
- *Music, sound effects and digitized speech* together require the most memory.
  * The Sound Blaster and Sound Blaster Pro require a total of approximately 557K to run music, effects and speech.
  * Using a Roland MT-32 and LAPC-1 for music and effects with either Sound Blaster board for speech requires a total of approximately 549K free.

Available RAM

To find out how much memory you have available, run CHKDSK or MEM, two DOS programs designed for this purpose. If you use CHKDSK, look at the last line of the information presented. If you use MEM, look for the line describing the largest executable program size. This tells you how much RAM memory is free. For example, CHKDSK might tell you that your 640K system has 519490 bytes free.

Continuing the Sound Blaster example above: You must have 557K free to play the game with both sound and speech. (That's 570368 bytes.) If CHKDSK tells you that you have 519490, for example, you don't have enough free memory and the game will not run.

Freeing RAM

If you don't have enough memory to run *ULTIMA Underworld*, you may want to remove memory-resident programs that are unnecessary for system usage from your AUTOEXEC.BAT and CONFIG.SYS start-up files.

You can view these files by using the DOS TYPE command. (Enter "TYPE AUTOEXEC.BAT" at your DOS prompt to view your AUTOEXEC.BAT file.)

To edit your AUTOEXEC.BAT or CONFIG.SYS files, use any commercial text editor or word processor capable of saving files as "text only." Either EDIT, the text editor included with DOS 5.0, or EDLIN, the text editor included with earlier versions of DOS, will do the job. Consult your DOS manual for information about modifying files with EDIT or EDLIN.

Do *not* delete your AUTOEXEC.BAT or CONFIG.SYS files completely — without them, your computer will not function.

Making a New Floppy Boot Disk

If you need more free RAM, but do not want to reconfigure your system, make a bootable system floppy disk to start your computer prior to play. To do this, insert a blank disk into your A drive. Type your hard drive prompt (for example, "C:") followed by "FORMAT A:/S." This will copy enough of your system files onto the floppy disk. You can now use this disk to boot up the machine.

However, to play *ULTIMA Underworld*, you must also copy your CONFIG.SYS and AUTOEXEC.BAT files to your boot disk so you can access expanded memory (see "Expanded Memory," below) and use a mouse. Then consult the documentation that came with your memory manager and mouse to edit these crucial files as necessary to allow their use and to free up as much RAM as possible.

Should this process fail, it is also possible to create a bootable floppy by typing "SYS Spacebar A:" after the drive prompt. When the words SYSTEM TRANSFERRED appear, type "COPY COMMAND.COM Spacebar A:" and you will see "1 FILE COPIED." This indicates that the disk is now a boot disk. If you are running under DOS 4.01, also copy SHARE.EXE onto this boot disk. Finally, copy your AUTOEXEC.BAT and CONFIG.SYS files (suitably edited, as above).

Turn your computer off, insert your new boot disk in your A drive, and turn the computer back on. Change to your hard drive (by typing "<DRIVE LETTER>: Enter"), switch to the directory containing *ULTIMA Underworld* (type "CD\UW Enter" if you selected the default directory) and type "UW Enter" to begin play.

Expanded Memory

Memory beyond 640K can be allocated as *expanded memory*. Expanded memory is not the same as *extended memory* — if your computer has extended memory, reconfigure it as expanded memory.

To access expanded memory on 386 systems, you must use an expanded memory manager program. Two of the most common ones are Quarterdeck's QEMM.SYS, and EMM386.SYS (which comes with Microsoft *Windows* and DOS 5.0) but there are others. These memory managers are installed by adding a line to the CONFIG.SYS file on your computer.

The Microsoft memory manager allocates only 256K of expanded memory unless you specify a greater amount. Consult your documentation and allocate at least 480K of expanded memory — 500K to 1 megabyte is even better. (Note that you must have 480K of *available* expanded memory. Memory resident software can use up some of the available memory, so you may have to allocate more than the minimum 480K in order to run *ULTIMA Underworld*.)

In addition, you must have HIMEM installed to use the *Windows* memory manager. Your CONFIG.SYS file should include the following lines in this order:

```
DEVICE=<PATH>\HIMEM.SYS
DEVICE=<PATH>\EMM386.SYS 480
```

"<PATH>" is the directory in which these files are found (usually C:\WINDOWS, if you use Windows or C:\DOS, if you use DOS 5.0). The number 480 indicates the amount of memory you want to access as expanded memory. You should allocate more, if you can.

Consult your hardware dealer or your expanded memory manager's documentation for more information about configuring expanded memory and determining how much expanded memory is available.

Hard Disk Space

ULTIMA Underworld requires at least 8 megabytes of hard disk space to install. As you add features, however, the space requirement grows. Additional features require extra hard disk space, as follows:

- *Animating Cut Scenes* require an additional 3 megabytes of hard drive disk space.
- *Music and Sound Effects* require an additional 300K of hard drive disk space.
- *Digitized speech* requires an additional 2 megabytes of disk space on your hard drive.

To determine how much free hard disk space you must have to install the game, add the number of megabytes required for each option you want to the minimum of 8 megabytes.

For example, the full game — including animating cut scenes (+3 megabytes), Roland sound (+300K) and Sound Blaster digitized speech (+2 megabytes) — requires a little more than 13 megabytes of free hard disk space.

In addition to the space required to install the game, you must have an additional 700K free to begin play. This space is required for saved games. If you don't have this 700K free when you try to play, the game will not run.

TROUBLESHOOTING

***ULTIMA Underworld* fails to load or run.**

• *You may not have sufficient free RAM.* Run the CHKDSK or MEM program included with DOS to check your computer's available RAM. To do this, type "CHKDSK" or "MEM" after the prompt for the drive in which you have installed the game. In CHKDSK, compare the last line on-screen to the 534,528 bytes of free RAM required. In MEM, consult the third line ("largest executable program size"). Free up RAM if needed.

• *You may be using a memory manager program that uses up too much base RAM to run* ULTIMA Underworld. For example, depending upon your system configuration, EMM386.SYS (the Expanded Memory Manager included with Microsoft *Windows*) may use too much of your 640K to permit *ULTIMA Underworld* to run.

• *Your CONFIG.SYS file may need to be modified.* If you get a message that reads, "Internal Error" or "Underworld can no longer run. Error code ####," edit your CONFIG.SYS file so the line reading "FILES=##" reads "FILES=20" (or more). This should allow you to play the game.

• *You may have a memory-resident TSR program that conflicts with the game.* Boot the computer from a DOS system floppy (as in "Making a New Floppy Boot Disk," above) or remove memory-resident programs before running the game.

• *You may have chosen an invalid configuration during the install process.* Check your configuration and, if necessary, re-install the game.

• *You may have filled all free space on the active disk drive.* Use the DOS DIR command to check available hard drive space. You need at least 8 megabytes on your hard drive to install the game and 700K of free hard disk space to run it.

My mouse pointer doesn't respond properly.

Some rare combinations of hardware and software cause mouse conflicts that freeze the on-screen pointer. If your mouse pointer ever stops moving, press Alt F4 to free the mouse and allow the pointer to move normally.

My game runs too slowly.

Your computer may not be fast enough to run the game efficiently. The minimum configuration is a 16 MHz 386SX, but movement and animation are faster and smoother on a faster computer. From the main game screen, select the Options icon, followed by "Detail." Experiment with the various detail levels until you find a balance between speed and detail that suits you.

When I select PC Speaker sound effects all I get are "Beeps" and "Boops."

There's nothing wrong with your speaker or your game. The PC speaker sound effects are not intended to be realistic. They do, however, provide important feedback (whether you hit a creature in combat, for example). The best answer is to upgrade your system with a sound card. (The installation menu lists the cards supported by *ULTIMA Underworld*.) If a system upgrade is not possible and you'd rather play in silence, select the Options icon from the main game screen, followed by the "Sound" option. Turn sound off and return to the game.

I want to play different characters in different games.

ULTIMA Underworld *allows you to save up to four different games at once.* You can save four different points in a single character's adventure or you can save one character's adventure in the first saved game slot, another character's adventure in the second slot, and so on. Any combination of characters and saved game slots is possible (up to the maximum of four).

I've tried saving my game, but I keep getting a message that says, "SAVED GAME FAILED."

Each saved game takes up approximately 300K of hard disk space. If you don't have that much available, you can't save. To get around this, you can save your new position over an existing saved game. Select the Options icon from the main game screen, followed by the "Save Game" option. Then, simply select a saved game slot you've already used. When you are asked to enter a name for the game, press Enter to use the same name as the old game, or type in a new one.

In addition, you must have 700K of free hard disk space available when you begin a session.

None of the suggestions above seem to help.

If you get an error message you don't understand, or you can't solve an ULTIMA Underworld *problem, call ORIGIN Customer Service* at (512) 328-0282, Monday through Friday, between 9 a.m. and 5 p.m., Central time. Please have the following information ready, if possible:

- the error message displayed when the problem occurred (if any),
- which version of DOS you use,
- free RAM (last line of CHKDSK info),
- expanded memory available,
- your mouse and mouse driver type,
- your graphics mode,
- your machine type,
- your sound board (if any),
- the contents of your CONFIG.SYS and AUTOEXEC.BAT files,
- whether you use *Windows* or a DOS shell.

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